

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.: 10/764,726
Applicant(s): J. David Blaha
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Examiner: Mary C. Hoffman
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APPEAL BRIEF UNDER 37 CFR § 41.37

This Appeal Brief is filed pursuant to the May 11, 2007 Notice of Appeal to the Board of Patent Appeals and Interferences.

1. *Real Party in Interest*

The real party in interest in this appeal is Wright Medical Technology, Inc., the assignee of the above-referenced patent application.

2. *Related Appeals and Interferences*

There are no related appeals or interferences involving this application or its claimed subject matter.

3. *Status of Claims*

Claims 1-10 and 13-27 are pending. Claim 5 has been withdrawn under an election requirement. Claims 21-23 are objected to. Claims 1-4, 6-10, 12-20 and 24-27 stand rejected as unpatentable over a combination of prior art references as set forth in greater detail below. The prior art rejection of all pending claims is appealed herein.

4. *Status of Amendments*

The claims presented on appeal were last amended on November 15, 2006 in response to an August 21, 2006 office action. All amendments have been entered.

5. *Summary of Claimed Subject Matter*

The invention is a compacting broach 10 for forming a cavity in the intramedullary canal 52 of a bone to receive a prosthetic component. In **Claim 1**, the compacting broach 10 comprises an elongate body 12 having a central longitudinal axis 15, a rearward end 16, and a forward end 18. (**Specification**, pg. 5, line 27; pg. 6, lines 1-2). A plurality of cutting teeth 22 are on a surface of the elongated body 12 and are matched to corresponding corners 24 of the prosthetic component 26. (**Specification** pg. 6, lines 5-9). The forward end 18 of the elongate body 12 has a distal tip 14. (**Specification** pg. 6, lines 1-2). As shown in the embodiments of **Figure 1** and **6**, the distal tip 14 comprises a plurality of fins 34 extending radially to the central longitudinal axis 15 and extending longitudinally and distally from the forward end 18 of the body 12 to converge at an apex 36 aligned with the central longitudinal axis 15. (**Specification** pg. 7, lines 5-8). The fins 34 are disposed inwardly of the cutting teeth 22.

Claim 13, which depends directly from **Claim 1**, provides that the distal tip 14 comprises four planar fins 34 at 90 degree spaced locations about the central longitudinal axis 15, as shown in the embodiment of **Figure 4**. (**Specification** pg. 7, lines 8-10). **Claim 15**, which depends from **Claim 13**, provides that the distal tip 14 has a bullet-shape in longitudinal profile, as shown in the embodiment of **Figure 3**. (**Specification** pg. 7, line 13).

Claim 14, which depends directly from **Claim 1**, provides that the distal tip 14 comprises three planar fins 34, as shown in the embodiment of **Figure 5**. (**Specification** pg. 7, line 19). **Claim 16**, which depends from **Claim 14**, provides that the distal tip 14 has a bullet-shape in longitudinal profile, as shown in the embodiment of **Figure 3**. (**Specification** pg. 7, line 13).

Claim 24, which depends from **Claim 1**, provides that the plurality of fins 34 are fixedly attached to the elongate body 12, as shown in the embodiments of **Figures 1, 3** and **6**. (**Specification** pg. 7, line 6).

In independent **Claim 2**, the compacting broach 10 comprises an elongate body 12 having a central longitudinal axis 15, a rearward end 16, and a forward end 18. (**Specification pg. 5, line 27; pg. 6, lines 1-2**). A plurality of corner edges 20 extend longitudinally along the body to the forward end 18. (**Specification pg. 6, lines 4-6**). A plurality of cutting teeth 22 are along the corner edges 20. Side walls 30 connect the cutting teeth 22 of adjacent corner edges 20. (**Specification pg. 6, lines 5-6**). The side walls 30 extend inwardly from the cutting teeth 22 in a direction of the central longitudinal axis 15. As indicated in **Figure 8**, the corner edges 20 are matched to corresponding corners 24 of a prosthetic component 26. (**Specification pg. 6, lines 8-9**). A forward end 18 of the body 12 has a distal tip 14. The distal tip 14 comprises a plurality of fins 34 extending radial to the central longitudinal axis 15 and extending longitudinally, distally from the forward end 18 of the body to converge at an apex 36 aligned with the central longitudinal axis 15. (**Specification 7, lines 5-7**). The fins 34 are disposed inwardly of the cutting teeth 22.

Claim 3 depends from **Claim 2**, and further specifies that the body 12 comprises four corner edges 20 matched to corresponding corners 24 of a prosthetic component 26 of rectangular cross-section, as indicated in **Figure 8**. (**Specification pg. 7, lines 16-17**). **Claim 17**, which depends from **Claim 3**, provides that the distal tip 14 comprises four planar fins 34 at 90 degree spaced locations about the central longitudinal axis 15, the fins 34 being aligned with the teeth of the corner edges 20, respectively, as indicated in the embodiment of **Figures 3-4**. (**Specification pg. 7, lines 8-10**). **Claim 18**, which depends from **claim 17**, provides that the distal tip 14 has a bullet-shape in longitudinal profile, as shown in the embodiment of **Figure 3**. (**Specification pg. 7, line 13**). **Claim 19**, which depends from **claim 18**, provides that the side walls 30 have a concave configuration, as indicated in the embodiment of **Figure 2**. (**Specification pg. 6, line 25**). **Claim 20**, which depends from **claim 18**, provides that each of the side walls 30 comprises first and second side wall segments 140, 142 extending angularly inwardly from the teeth 122 of the adjacent corner edges 120, respectively, in the direction of the central longitudinal axis 15, as indicated in the embodiment of **Figure 7**. (**Specification pg. 7, lines 24-26**). The first and second side wall segments 140, 142 converge at a point 144. (**Specification pg. 7, line 26**).

Claim 4 depends from independent **claim 2** and further provides that the side walls 30 have a concave configuration, as shown in the embodiments of **Figures 2 and 8**. (**Specification pg. 6, line 25**).

Claim 5 has been withdrawn under an election requirement. **Claim 5** depends from **Claim 2** and further provides that each of the side walls 30 comprises first and second side wall segments 140, 142 extend angularly inwardly from the teeth 122 of the adjacent corner edges 20, respectively, in the direction of the central longitudinal axis 15. (**Specification pg. 7, lines 24-26**). The first and second side wall segments converge at a point 144. (**Specification pg. 7, line 26**). An embodiment of **Claim 5** is shown in **Figure 7**.

Claim 6 depends from **Claim 2** and further provides that the distal tip 14 comprises four fins 34 at 90 degree spaced locations about the central longitudinal axis 15, as shown in the embodiments of **Figures 3-4**. (**Specification pg. 7, lines 8-10**). **Claim 7** depends from **Claim 6** and further provides that the fins 34 are aligned with the teeth 22 of the corner edges 20, as shown in the embodiments of **Figures 1 and 3**. (**Specification pg. 7, lines 16-17**).

Claim 8 depends from **Claim 2** and provides that the distal tip 14 of the compacting broach 10 comprises three fins 34, as shown in the embodiment of **Figure 5**. (**Specification pg. 7, line 19**).

Claim 9 depends from **claim 2** and provides that the fins 34 of the compacting broach 10 are planar, as shown in the embodiments of **Figures 3-5**. (**Specification pg. 7, line 8**).

Claim 10 depends from **Claim 2** and provides that the distal tip 14 of the compacting broach 10 has a bullet-shape in longitudinal profile, as shown in the embodiment of **Figure 5**. (**Specification pg. 7, line 13**).

Several dependent claims which depend directly or indirectly from **Claim 2** specify that the plurality of fins 34 are fixedly attached to the elongate body 12. (**Specification pg. 7, lines 5-6**). These include: **Claim 25**, which depends from **Claim 2**; **Claim 26**, which depends from **Claim 3**; and **Claim 27**, which depends from **claim 23**. Such embodiments are shown in **Figures 1, 3 and 6**.

Claims 21-23 have been objected to, but would be allowable if rewritten. **Claims 21-23** all provide that the cutting teeth 22 along the corner edges 20 extend without interruption along each corner edge 20 from a proximal end of the fins 34 to adjacent the rearward end 16, an

embodiment indicated in **Figure 1** and discussed at ¶0021 of applicant's published application. (Specification pg. 6, lines 12-15). **Claim 21** depends from **Claim 2**, **Claim 22** depends from **Claim 3**, and **Claim 23** depends from **Claim 17**.

6. *Grounds of Rejection to be Reviewed on Appeal*

Claims 1-4, 6-10, 13-20 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer (U.S. Patent No. 4,549,319) in view of Mackwood Ling et al. (U.S. Patent No. 6,241,772).

7. *Argument*

Each argument against the prior art rejection of record is set forth below.

Claims 1-4, 6-10, 13-20 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meyer (U.S. Patent No. 4,549,319) in view of Mackwood Ling et al. (U.S. Patent No. 6,241,772). Applicant traverses on grounds that a prima facie case of obviousness has not been established. Elements of the claimed invention are missing from the cited references, there is no suggestion or motivation to combine the centralizer plug of Mackwood Ling with a compactor instrument, the cited references teach away from the claim combination, and the record is clear that it was applicant who identified the shortcomings of the prior art and taught the solution.

The Examiner takes the position that Meyer discloses the claimed invention with the exception of the bullet-shaped distal tip comprising three or four fins, spaced at 90 degree spaced locations about the central longitudinal axis, extending radial to the central longitudinal axis and extending longitudinally, distally from the forward end of the body to converge at an apex aligned with the central longitudinal axis, the fins being disposed inwardly. The Examiner interprets Mackwood Ling as disclosing, with reference to Figure 4, a centralizing device for the stem of a prosthesis, including a bullet-shaped distal tip having the foregoing characteristics. The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to construct the device of Meyer with a bullet-shaped distal tip having the characteristics of Mackwood Ling's centralizer plug, the fins being disposed inwardly in order to centralize the device at the distal end.

In *KSR Int'l Co. v. Teleflex, Inc.*, 127 S.Ct. 1727, 167 L.Ed.2d 705, 82 USPQ.2d 1385 (2007), the Supreme Court recently relaxed the standards for demonstrating obviousness by endorsing a less rigid application of the suggestion-to-combine standard. However, applicant respectfully suggests that *KSR* did not endorse the approach taken here, where elements are missing from the prior art, and significant modifications would have to be made in order to achieve the configuration and function of the claimed invention. In *KSR*, the Supreme Court explained why it is important to identify a reason that would have prompted a person of ordinary skill in the art to combine elements in the manner of the claimed invention:

[A] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.

Id. at 1741.

In the present case, the claimed invention relies upon building blocks, but it also creates new blocks. Several of the claimed elements, as well as arrangements of the elements, are not found in the cited references. The cited references do not disclose a compacting broach having a plurality of fins on a distal end, as claimed in independent claims 1 and 2. The cited references also do not teach the fins being disposed inwardly of the cutting teeth of the broach, as claimed in claims 1 and 2. Dependent claims 24-27 further specify that the plurality of fins are fixedly attached to the elongate body of the compactor instrument. As will be discussed below, the centralizer plug of the Mackwood Ling reference merely slips over the end of a final implant (not a broach) for use in cementing the implant in place in a previously prepared intramedullary canal. The Mackwood Ling centralizer extends radially outward beyond the periphery of the implant, and is not fixedly attached to the implant. Applicant's specification identifies the missing elements, and provides the sole teaching or suggestion for applicant's claimed configuration.

In reply to Applicant's assertion that the Meyer reference does not show a prosthetic component with a rectangular cross section in claim 3, the Examiner noted that the prosthetic component is recited functionally, i.e. "to receive a prosthetic component of rectangular cross-section." The Examiner concluded that in view of the functional recitation, the device of "Meyer need only possess corner edges that are capable of matching corners of a prosthetic component with rectangular cross section." It is difficult to see how Meyer's plurality of broach fins 28 radially disposed on a prosthetic having a round cross-section could be interpreted as "four corner edges matched to corresponding corners of a prosthetic component of rectangular cross-section." Applicant's specification should serve as the guide for interpreting the meaning of the claim phrase "a prosthetic component of rectangular cross section." As discussed at ¶0027 of applicant's published application, **Figure 8** shows how applicant's claimed compacting broach 10 forms a centered cavity 58 in the intramedullary canal 52 for close receipt of side walls 60 of the final rectangular stem implant 26 (side walls 60 and stem 26 are indicated but not shown in **Figure 8**). It is respectfully suggested that interpreting Meyer as teaching the claimed configuration disregards applicant's description of the respective terms.

Claims 21-23 have been objected to, but would be allowable if rewritten. **Claims 21-23** provide that the cutting teeth 22 along the corner edges 20 extend without interruption along each corner edge 20 from a proximal end of the fins 34 to adjacent the rearward end 16. While applicant appreciates the conclusion that **Claims 21-23** would be allowable with amendment, it seems reasonable to conclude that other features that are not found in the cited references, such as fins disposed inwardly of the cutting teeth, or fins fixedly attached to the distal end of the compacting broach, are also non-obvious.

In *KSR*, the Supreme Court recognized that there is no inconsistency between the idea underlying the longstanding teaching-suggestion-motivation test and the *Graham v. John Deere* analysis, provided that the teaching-suggestion-motivation test is not rigidly applied. *Id.*, 127 S.Ct. at 1741. In the present case, where elements and configurations of the claimed invention are not found in the cited references, applicant respectfully suggests that the teaching-suggestion-motivation test should be applied.

The Examiner points to no plausible suggestion in the cited references, or in the knowledge generally available to one of ordinary skill in the art at the time of the invention, to provide Meyer's instrument with a plurality of fins for use in centralizing the instrument. Meyers mentions that in order to avoid having to provide a plurality of different sized reamers to match different sizes of implant, PMMA cement can be used to fix the distal portion of the stem in the canal of the femur. (Meyers col. 5, lines 60-end; col. 6, lines 60-64; Fig. 4). Based on Meyer's reference to cementing the distal portion of the stem, the Examiner has taken the position that "Thus, the centralizer plug of Mackwood Ling would be useful in stabilizing the cemented distal stem of the prosthesis." As discussed below, centralizers are designed for and have long been used for centering cemented stems. It is therefore not clear to applicant why this well known function of centralizers would suggest modifying the centralizer in the manner necessary to meet the limitations of the claimed invention.

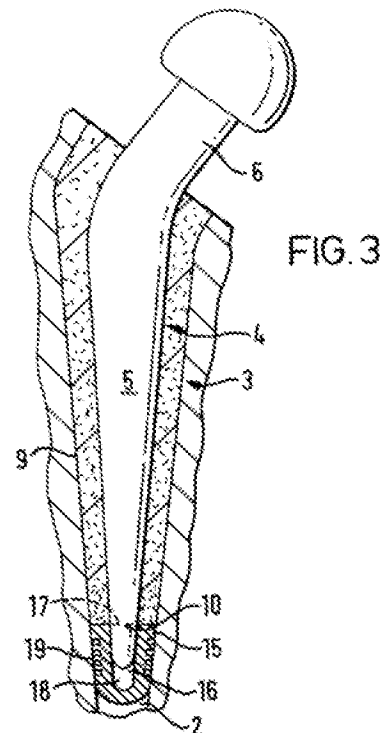
The only other showing of obviousness appears in the following paragraph of the office action:

It would have been obvious to one of ordinary skill in the art to construct the device of Meyer with a bullet-shaped distal tip comprising three fins and four fins fixedly attached, spaced at 90 degrees spaced locations about the central longitudinal axis, extending radial to the central longitudinal axis and extending longitudinally, distally from the forward end of the body to converge at an apex aligned with the central longitudinal axis, the fins being disposed inwardly in view of Mackwood Ling et al. in order to centralize the device at the distal end.

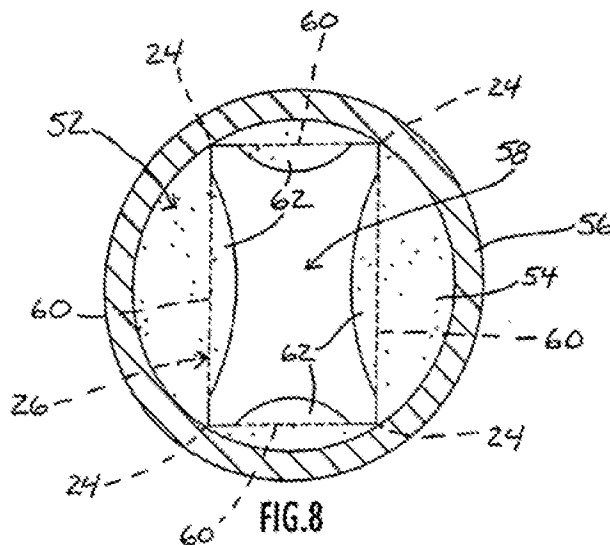
(Final Office Action, pp. 3-4). However, the foregoing is merely a conclusion, and is based on applicant's teaching. The instrument of Mackwood Ling is used in a very different situation, and to solve a very different problem, than the instrument of applicant or Meyer. Applicant's compactor instrument is used to *prepare* a femoral canal for later receipt of a *cementless* femoral stem, while Mackwood Ling's centralizer plug is used to position a *cemented* femoral stem in a *previously prepared* femoral canal. When using a cementless stem, there is no use for a centralizer plug of the type described in Mackwood Ling, because the surgeon prepares the femoral canal to closely receive the cementless stem in a fixed relationship. The close fit serves to position the cementless stem. The significant differences between the structures, functions and uses of cemented and cementless femoral prosthetic stems obviate any motivation to combine.

The Meyer patent, which was filed in 1982, was an early effort to improve the design of cementless stems. Meyer noted that in the early 1980's "orthopedic surgeons most commonly use[d] polymethyl methacrylate (PMMA) cement for fixing artificial joint components to bone." (Meyer, Col. 1, Lines 8-11). Meyer further noted that "[f]ailure of [cemented] prosthetic joint implants is often traceable to failure in the cement fixation." (Meyer, Col. 1, Lines 30-31). A lot has changed since 1982. Today, *cementless* stems are used much more commonly than cemented stems, primarily because cementless stems preserve bone stock, are easier to remove than cemented stems, and are less prone to failure. In most cases, a surgeon will initially implant a cementless femoral stem. However, over a period of time (e.g. 20 years), bone loss in the area around an original, or "primary," cementless stem may make it necessary to "revise" the implant by removing the primary stem and replacing it with a "revision" femoral stem. If bone loss is significant, the surgeon will replace the primary cementless stem with a cemented stem.

As shown in Figure 3 of Mackwood Ling at right, cemented stems are configured to fit within a PMMA cement mantle 4. The Mackwood Ling centralizer plug 15 has an annular opening 10 that is configured to receive a distal end of a cemented stem 6 having an annular cross-section and a smooth surface. The centralizer plug 15 plugs the previously prepared intramedullary canal, and also assists in centering the stem 6 in the canal during the steps of pouring and curing the cement mantle 4 in the space around the stem 6. Note that the centralizer plug 15 juts well beyond the periphery of the distal end of the stem 6.



However, with cementless stem implants, there is no need for a centralizer plug, because the walls of the prepared intramedullary canal closely receive, and therefore orient, the stem, as indicated in applicant's Figure 8:



As discussed at ¶0027 of applicant's published application, Figure 8 shows how applicant's claimed compacting broach 10 forms a centered cavity 58 in the intramedullary canal 52 for close receipt of side walls 60 of the final rectangular stem implant 26. In a similar manner, the position of Meyer's broach and implant are determined by the flared proximal fluted portion 34, as indicated in Meyer Figure 6. Since the position of Meyer is determined by the flared proximal fluted portion 34, it is not clear why a person of ordinary skill in the art would have been motivated to add a plurality of fins to the distal end of the Meyer broach for use in centering the broach at the distal end.

It is also important to note that centralizer plugs of the type described in Mackwood Ling are not used to prepare an intramedullary canal for receipt of the femoral stem. Instead, centralizer plugs are used during the step of cementing the final femoral stem implant into a previously prepared canal. As noted above, the centralizer plug serves both to plug the previously prepared canal for receipt of cement, and also to center the stem during the step of curing cement around the stem. Mackwood Ling provides no discussion of the preparation of femoral canals, and instead assumes the existence of a properly prepared canal. The failure of Mackwood Ling to discuss intramedullary canal preparation, much less suggest the use of a

centralizer plug during canal preparation, further obviates any suggestion to combine in the manner of the claimed invention.

The record is clear that applicant identified the problem addressed by the present invention, and provided the claimed solution. In applicant's background section, applicant stated:

In the Deyerle patents, the cutting or working sections of the rasps terminate at flat distal end surfaces which lead the rasps into the bone. The distal end configurations of prior rasps and broaches fail to provide any structure for centering the rasps and broaches in the intramedullary canals of the bones prior to the cutting teeth engaging cortical bone. As such, prior rasps and broaches may be introduced into the intramedullary canal off-center, such that the cutting teeth of the rasps and broaches do not evenly engage cortical bone as the rasps and broaches are advanced into the canals.

(¶0005 of applicant's published application). Applicant's observations make clear that it was applicant who identified the shortcoming of prior art instruments such as Meyer, and then provided the solution. In the absence of some teaching, suggestion or motivation to combine the cited references, it is respectfully suggested the obviousness rejection is based on hindsight reconstruction, with applicant's disclosure being used as a blue print to construct the claimed invention.

In *KSR*, the Supreme Court recognized that when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious. *Id.*, 127 S.Ct. at 1740, citing *United States v. Adams*, 383 U.S. 39, 51-52, 86 S.Ct. 708, 15 L.Ed.2d 572 (1966). Applicant respectfully suggests that the prior art teaches away. Because the Mackwood Ling centralizer is used to center a stem in a previously prepared intramedullary canal, the proposed combination of references does not have a reasonable expectation of success, and would in fact destroy the usefulness of the cited references. It remains unclear to applicant how putting a centralizer plug of the type described in Mackwood Ling on a broaching instrument such as Meyer would achieve the objective of the present invention. References are not properly combinable if their intended function is destroyed. See e.g. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). As indicated in Mackwood Ling Figure 3, above, the Mackwood Ling centralizer plug has an annular opening that is designed to receive a cemented stem having an annular cross-section. It seems clear that a

centralizer plug configured to fit on and center a stem during cement curing could not be used in a broaching procedure. Mackwood Ling's centralizer plug would have to be significantly modified in order to achieve applicant's claimed structure, and the intended function of Mackwood Ling's centralizer plug would be destroyed. Further, as noted, applicant's disclosure provides the sole suggestion or motivation for making the requisite changes to Mackwood Ling.

Applicant also questions whether a centralizer would be useful with the Meyer implant. First, as shown in Meyer Figure 4, the proximal end of the Meyer implant is designed to fit snugly against the surrounding bone. The location of the distal part of the Meyer stem is determined by the tight fit between the proximal stem and the surrounding bone. In view of this tight fit, a centralizer on the distal end of the implant would not serve to centralize the implant. Second, based on Meyer Figure 4, a surgeon would have a difficult time passing the centralizer through the narrow proximal portion of the patient's intramedullary canal and into the wider distal portion. To do so, the centralizer would have to be pliable in order to pass through the narrow portion. The centralizer would have to be inserted separately from the stem, which would not serve the objective of Meyer or the function of the claimed invention. The foregoing features and objectives of Meyer appear to teach away from modifying Meyer to include a centralizer.

In response to applicant's position that combining the cited references would destroy the function of the Mackwood Ling centralizer, the Examiner noted that in Meyer, the femoral canal is prepared first for the stem, and that the self rasping portion of the prosthesis is only located near the upper region. The Examiner took the position that using the centralizer plug of Mackwood Ling with the Meyer reference would not destroy their intended functions, since the rasping-portion of the implant is only necessary to provide a tight fit at the upper regions of the prosthesis. The Examiner concluded that the "centralizer would not be involved in the broaching procedure, since the femoral canal adjacent the stem portion will have already been reamed/broached, and only the self-rasping portion of the prosthesis of Meyer broaches the upper portion of the canal." The Examiner's observation appears to confirm applicant's point. Since the centralizer will not be involved in the broaching procedure, why would a person of skill in the art at the time of the invention have been motivated to provide a broach with a plurality of fins on the distal end? As previously noted, significant modifications would have to be made to the Mackwood Ling centralizer (as well as to the Meyer), and the intended function of the prior art

devices would be destroyed. For example, if the Mackwood Ling centralizer were placed on the Meyer implant during broaching, the centralizer would dislodge during the broaching process.

As discussed above, independent claims 1 and 2 further specify "said fins being disposed inwardly of said cutting teeth." This feature is not found in the cited references, and modifying Mackwood Ling to meet this requirement would also destroy the function of Mackwood Ling. Applicant's inwardly disposed fins serve to orient the broach during the broaching process, but without affecting the path of the teeth of the broach as the teeth broach the surrounding bone. In contrast, as can be seen in Mackwood Ling Figure 3, a centralizer is specifically designed to jut out from the distal end of the implant, such that the periphery of the centralizer abuts against the surrounding bone. If the Mackwood Ling centralizer were reconfigured such that the centralizer were disposed inwardly of the cutting components of the Meyer stem, the function of the centralizer would be destroyed, because the centralizer would not abut the surrounding bone. (Compare Meyer Figure 4 with Mackwood Ling Figure 3; see also Applicant's Figure 1).

In *KSR*, the Supreme Court cautioned that "[a] factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning." *Id.*, 127 S.Ct. at 1742, citing *Graham*, 383 U.S. at 36. As noted above, applicant maintains its position that applicant's disclosure is being used to reconstruct the claimed invention. In reply to applicant's arguments concerning hindsight reconstruction, the Examiner noted that so long as the obviousness showing takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper, citing *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). However, the problem with the obviousness showing is that it based solely on knowledge gleaned from applicant's disclosure. Under the circumstances, it is respectfully suggested that a *prima facie* showing of obviousness has not been established.

For the reasons set forth above, Applicants respectfully request that the Board overturn the rejections of record.

8. *Claims Appendix*

An appendix containing a copy of the claims involved in the appeal is attached below.

9. *Evidence Appendix*

None.

10. *Related Proceedings Appendix*

None.

CONCLUSION

In view of the foregoing arguments, Appellant respectfully submits that Claims 1-10 and 13-27 are patentable over the cited references. A decision from the Board of Patent Appeals and Interferences reversing the final rejection of the pending claims is therefore requested.

Respectfully submitted,

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CLAIMS APPENDIX

1. (Previously presented) A compacting broach for forming a cavity in the intramedullary canal of a bone to receive a prosthetic component, comprising

an elongate body having a central longitudinal axis, a rearward end, a forward end, and a plurality of cutting teeth on a surface of said elongated body and being matched to corresponding corners of the prosthetic component; and

a distal tip at said forward end of said elongate body, said distal tip comprising a plurality of fins extending radially to said central longitudinal axis and extending longitudinally, distally from said forward end of said body to converge at an apex aligned with said central longitudinal axis, said fins being disposed inwardly of said cutting teeth.

2. (Previously presented) A compacting broach for forming a cavity in the intramedullary canal of a bone to receive a prosthetic component, comprising

an elongate body having a central longitudinal axis, a rearward end, a forward end, a plurality of corner edges extending longitudinally along said body to said forward end, cutting teeth along said corner edges, and side walls connecting said cutting teeth of adjacent corner edges, said side walls extending inwardly from said cutting teeth in a direction of said central longitudinal axis, said corner edges being matched to corresponding corners of the prosthetic component; and

a distal tip at said forward end of said body, said distal tip comprising a plurality of fins extending radial to said central longitudinal axis and extending longitudinally, distally from said forward end of said body to converge at an apex aligned with said central longitudinal axis, said fins being disposed inwardly of said cutting teeth.

3. (Original) The compacting broach recited in claim 2 wherein said body comprises four corner edges matched to corresponding corners of a prosthetic component of rectangular cross-section.

4. (Original) The compacting broach recited in claim 2 wherein said side walls have a concave configuration.

5. (Withdrawn) The compacting broach recited in claim 2 wherein each of said side walls comprises first and second side wall segments extending angularly inwardly from said

teeth of said adjacent corner edges, respectively, in the direction of said central longitudinal axis and converging at a point.

6. (Original) The compacting broach recited in claim 2 wherein said distal tip comprises four fins at 90 degree spaced locations about said central longitudinal axis.

7. (Original) The compacting broach recited in claim 6 wherein said fins are aligned with said teeth of said corner edges, respectively.

8. (Original) The compacting broach recited in claim 2 wherein said distal tip comprises three fins.

9. (Original) The compacting broach recited in claim 2 wherein said fins are planar.

10. (Original) The compacting broach recited in claim 2 wherein said distal tip has a bullet-shape in longitudinal profile.

11-12. (Cancelled)

13. (Previously presented) The compacting broach recited in claim 1 wherein said distal tip comprises four planar fins at 90 degree spaced locations about said central longitudinal axis.

14. (Previously presented) The compacting broach recited in claim 1 wherein said distal tip comprises three planar fins.

15. (Previously presented) The compacting broach recited in claim 13 wherein said distal tip has a bullet-shape in longitudinal profile.

16. (Previously presented) The compacting broach recited in claim 14 wherein said distal tip has a bullet-shape in longitudinal profile.

17. (Previously presented) The compacting broach recited in claim 3 wherein said distal tip comprises four planar fins at 90 degree spaced locations about said central longitudinal axis, said fins being aligned with said teeth of said corner edges, respectively.

18. (Previously presented) The compacting broach recited in claim 17 wherein said distal tip has a bullet-shape in longitudinal profile.

19. (Previously presented) The compacting broach recited in claim 18 wherein said side walls have a concave configuration.

20. (Previously presented) The compacting broach recited in claim 18 wherein each of said side walls comprises first and second side wall segments extending angularly inwardly

from said teeth of said adjacent corner edges, respectively, in the direction of said central longitudinal axis and converging at a point.

21. (Previously presented) The compacting broach recited in claim 2, wherein said cutting teeth along said corner edges extend without interruption along each said corner edge from a proximal end of said fins to adjacent said rearward end.

22. (Previously presented) The compacting broach recited in claim 3, wherein said cutting teeth along said corner edges extend without interruption along each said corner edge from a proximal end of said fins to adjacent said rearward end.

23. (Previously presented) The compacting broach recited in claim 17, wherein said cutting teeth along said corner edges extend without interruption along each said corner edge from a proximal end of said fins to adjacent said rearward end.

24. (Previously presented) The compacting broach recited in claim 1, wherein said plurality of fins are fixedly attached to said elongate body.

25. (Previously presented) The compacting broach recited in claim 2, wherein said plurality of fins are fixedly attached to said elongate body.

26. (Previously presented) The compacting broach recited in claim 3, wherein said plurality of fins are fixedly attached to said elongate body.

27. (Previously presented) The compacting broach recited in claim 23, wherein said plurality of fins are fixedly attached to said elongate body.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.